II. REMARKS

Status of the Claims

Pending claims

Claims 1-4 and 25-29 are pending and under examination. Claims 5-24 have been withdrawn in response to a Restriction Requirement.

Claims amended

Claims 1 and 29 are amended.

Support for the Claim Amendments

The specification sets forth a description of the invention in the amended claim. Support for the claim directed to more than one type of sequence unit can be found at least at page 3, lines 27 – 30.

Applicants respectfully request entry of the amendment set forth in this response under 37 CFR §1.116. The amendment does not raise any issues of new matter and the amended claim does not present new issues requiring further consideration or search.

Rejections under 35 USC §102(b)

The Examiner rejected claims 1-4 under 35 U.S.C. §102(b) as being anticipated by Urdea *et al.* (US Patent No. 5,124,246). Applicants respectfully traverse this rejection. Urdea *et al.* teach linear or branched oligonucleotide multimers, which are useful as amplifiers in biochemical assays. Without conceding to the correctness of the Examiner's rejection and solely in order to expedite the prosecution of the instant application, Applicants submit amended claim

1 directed to an amplification probe comprising a first region and a second region wherein in said second region includes a plurality of discretely labellable sequence units of more than one type. Applicants assert that Urdea *et al.* do not disclose an amplification probe comprising a second region as described above. Accordingly, Applicants assert that amended claim 1 and, as a result of their dependency on claim 1, pending claims 2-4 are novel over Urdea *et al.* and respectfully request withdrawal of the §102(b) rejection.

Rejections under 35 USC §102(e)

The Examiner rejected claims 1-4 under 35 U.S.C. 102(e) as allegedly being anticipated by Segev *et al.* (US Patent No. 5,437,977). Applicants respectfully traverse this rejection.

Segev *et al.* show branched oligonucleotides, which are useful as amplifiers in biochemical assays. Applicants submit that Segev *et al.* disclose an amplification probe, termed bridging molecule, that is itself labelled, as demonstrated at Figures 1-4, of US Patent No. 5,437,977, by an asterisk denoted above or below the binding molecule sequence depicted in the figures. Segev *et al.*, therefore, do not teach a probe which functions purely as an amplification probe per se. Nonetheless, Applicants submit amended claim 1 as described above. Accordingly, Applicants believe that the preceding argument and amendment resolve the Examiner's objection. Applicants, therefore, assert that amended claim 1 and, as a result of their dependency on claim 1, claims 2-4 are novel over Segev *et al.* and respectfully request withdrawal of the 102(e) rejection.

Rejections under 35 USC §103

In consideration of the Examiner's request under 35 USC §103 with respect to joint inventors, Applicants confirm the Examiner's presumption that the subject matter of the instant claims was commonly owned at the time of invention.

The Examiner rejected claims 25-26 under 35 U.S.C. §103(a) as being unpatentable over Urdea *et al.* (US Patent No. 5,124,246) in view of Fliss *et al.* (AUG 1993). Applicants respectfully traverse this rejection.

The Examiner alleges that Urdea *et al.* teach a reagent system which comprises 3 of the 4 components of the claimed reagent system, while Fliss *et al.* teach an antibody reagent capable of binding hybrids formed between a primary probe and its target sequence present in a biological sample. Applicants respectfully traverse this objection for the following reason. Applicants submit that although Fliss *et al.* disclose an antibody reagent capable of binding hybrids, the function of the monoclonal antibody taught by Fliss *et al.* is limited to the detection of *Listeria* DNA-RNA hybrids, as part of an immunoassay. Further, Fliss *et al.* do not teach an antibody reagent useful in the immunocapture of probe-target complexes for the purpose of immobilizing the complex in the detection of nucleic acid sequences. Accordingly, one skilled in the art would not have been led to the instant invention by Fliss *et al.* Accordingly, Applicants submit that claims 25-26 are not obvious in view of Urdea *et al.* and Fliss *et al.* and, therefore, respectfully request withdrawal of the 103(a) rejection.

The Examiner rejected claims 27-28 under 35 U.S.C. 103(a) as being unpatentable over Urdea *et al.* (US Patent No. 5,124,246) in view of Fliss *et al.* (AUG 1993) and further, in view of Stratagene Catalog (1993). The Examiner alleges that Urdea *et al.* in view of Fliss *et al.* teach a reagent system which comprises all of the components of the claimed diagnostic kit. Applicants respectfully traverse this rejection as argued above.

Applicants point out that the monoclonal antibody disclosed by Fliss *et al.* and antibody reagent of the instant application are applicable for distinct and unique uses. Thus, a worker

skilled in the art would not be motivated to modifying the reagent system taught by Urdea *et al.* by incorporating the monoclonal antibody disclosed by Fliss *et al.* Accordingly, Applicants submit that claims 27-28 are not obvious with respect to Urdea *et al.*, in view of Fliss *et al.* Applicants, therefore, respectfully request that the §103(a) rejection be withdrawn.

The Examiner rejected claim 29 under 35 U.S.C. 103(a) as allegedly being unpatentable over Urdea *et al.* (US Patent No. 5,124,246) in view of Fliss *et al.* (AUG 1993) and Stratagene Catalog (1993) and further, in view of Pardos *et al.* (US Patent No. 5,084,565). Applicants respectfully traverse this rejection.

The Examiner alleges that Urdea *et al.* in view of Fliss *et al.* and the Stratagene Catalog teach all of the limitation of claim 29 except that these references do not teach a primary probe that comprises a nucleic acid sequence complementary to a sequence unique to *E. coli.* The Examiner further alleges that Pardos *et al.* disclose a probe for the specific detection of *E. coli*, and as a result, renders the instant invention obvious. Applicants respectfully traverse this objection for the following reason. With respect to Fliss *et al.*, Applicants respectfully refer the Examiner to the arguments made above. Applicants submit that a worker skilled in the art in view of Pardos *et al.* would not consider the amplification probe disclosed in the instant invention for the detection of *E. coli* in food stuff, as the probe disclosed by Pardos *et al.* is capable of detecting rRNA transcripts in the absence of signal amplification. In particular, probes hybridizing to rRNA sequences would not require amplification, as provided by the probes of the instant invention, since the large number of rRNA transcripts present in a sample to be probed, by the sequence disclosed by Pardos *et al.*, would themselves warrant a strong signal. Thus, one of skill in the art would not be drawn to the probes taught by Urdea *et al.* in view of Pardos *et al.* Accordingly, Applicants assert that claim 29 is patentable over Urdea *et al.*, in view of Fliss *et*

al., Stratagene and Pardos *et al.* and, therefore, respectfully request withdrawal of the §103(a) rejection.

Rejection Regarding Double Patenting

The Examiner rejected claims 25-29 under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-5 of the patent issued to Pandian *et al.* (US Patent No. 6,306,657; the '657 patent). Applicants respectfully traverse this rejection.

In contrast to the pending claims, the '657 patent does not specifically recite "an amplification probe adapted to permit enhanced detectable labelling of a selected nucleic acid target, such probe comprising at least two regions of nucleic acid sequences: a first region including a sequence complementary to a sequence on a selected primary probe which also contains a sequence complementary to a sequence of said selected nucleic acid target, and a second region including a plurality of discretely labelable sequence units". As discussed on page 17 of the specification, the amplification probe serves to cause a plurality of detectable chemical labels to become attached to each amplification probe and thus, the signal is amplified once a probe/target complex is formed in direct proportion to the number of labeling probes that hybridize to the repeat sequence units. In addition, the present claims do not include a requirement that the primary nucleic acid probe comprise a "homopolymeric tail", as required in claims 1 and 3 of the '657 patent. As such, the claims are patentably distinct and Applicants respectfully request withdrawal of the double patenting rejection.

In view of the foregoing amendment and remarks, it is believed that the Examiner should withdraw the rejection of the pending claims. Applicants believe all claims pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested. Please charge any additional fees, or make any credits, to Deposit Account No. 50-1355.

Respectfully submitted,

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